UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/456,027	12/03/1999	GAURAV BANGA	NAP-042	5872

22883 7590 06/09/2004

SWERNOFSKY LAW GROUP PC
P.O. BOX 390013
MOUNTAIN VIEW, CA 94039-0013

EXAMINER	
CHU, GABRIEL L	

ART UNIT	PAPER NUMBER
2114	24

DATE MAILED: 06/09/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/456,027	BANGA, GAURAV	
	Examiner	Art Unit	
	Gabriel L. Chu	2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *29 March 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,13-22,27-36 and 41-43* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,13-22,27-36 and 41-43* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-7, 16-22, and 30-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5553235 to Chen et al. in view of US 5933594 to La Joie et al. and US 6189114 to Orr. Referring to claims 1, 16, and 30, Chen et al. disclose repeatedly reviewing monitoring statistics regarding operation of a data processing system, said steps of reviewing being performed at least as often as a selected time period (From line 46 of column 82, "Once constructed, the purpose of a performance pathology library is to provide wide and easy access to the body of knowledge of computer and network performance problems and solutions. This knowledge can then become the basis for advancing the state of the art in developing intelligent machines that can know when they are in a "poor performance" mode, take corrective action, and monitor the corresponding results in a closed feedback loop." Further, from line 62 of column 84, "The filtering process may need to sample the data over time to match a data trend in addition to individual sampled values."); processing said monitoring statistics using a diagnostic software module, in response to said steps of repeatedly reviewing (From line 46 of column 82, "Once constructed, the purpose of a performance pathology library is to provide wide and easy access to the body of knowledge of

computer and network performance problems and solutions. This knowledge can then become the basis for advancing the state of the art in developing intelligent machines that can know when they are in a "poor performance" mode, take corrective action, and monitor the corresponding results in a closed feedback loop." Further, from line 51 of column 84, "As "cures" are found for these performance "diseases", they are also stored in the database, and linked to the corresponding disease(s). A recording of the new "healthy" response is also stored so a user can see what the system should look like after application of the "cure" As observations become more precise, automatic data filters can be used to automatically correlate and cross correlate data patterns to help automate the data analysis process. The data filter takes specific system performance data at each sample point and runs it through a correlation procedure to see if the data values can be correlated to some known pathological pattern. The filtering process may need to sample the data over time to match a data trend in addition to individual sampled values. The filtering process includes combinations of arithmetic and boolean operators on the data variables. The data filter may generate a value that sets off an alarm or some other user specified process. For example, a data filter may set an alarm when paging space on the host machine is less than 10 percent free or there is less than 100 pages of free paging space."); wherein said diagnostic software diagnoses a behavior of said data processing system to determine a specific problem or problems by comparing said monitoring statistics to rules or patterns representing abnormal states of operation for said data processing system (From line 51 of column 84, "As "cures" are found for these performance "diseases", they are also stored in the

database, and linked to the corresponding disease(s). A recording of the new "healthy" response is also stored so a user can see what the system should look like after application of the "cure" As observations become more precise, automatic data filters can be used to automatically correlate and cross correlate data patterns to help automate the data analysis process. The data filter takes specific system performance data at each sample point and runs it through a correlation procedure to see if the data values can be correlated to some known pathological pattern. The filtering process may need to sample the data over time to match a data trend in addition to individual sampled values. The filtering process includes combinations of arithmetic and boolean operators on the data variables. The data filter may generate a value that sets off an alarm or some other user specified process. For example, a data filter may set an alarm when paging space on the host machine is less than 10 percent free or there is less than 100 pages of free paging space.").

Further referring to claims 1, 16, and 30, although Chen et al. do not specifically disclose said data processing system can be a file server, diagnosing a data processing system that is a file server is well known in the art. An example of this is shown by Orr, from line 11 of column 1, "The complexity of modern-day data processing systems provides many benefits to the user. However, the variety and complexity of different components in the system can give rise to problems in diagnosing the source of a problem in the system. Accordingly, it is an ongoing requirement to provide for diagnostic testing of data processing systems, especially systems such as, for example, network file servers where a problem can lead to significant network downtime and/or

loss of user data. Comprehensive diagnostic testing involves exercising the operation of many different components of the system in order to determine the cause of a fault." A person of ordinary skill in the art at the time of the invention would have been motivated to diagnose a file server because, from line 17 of column 1, "a problem can lead to significant network downtime and/or loss of user data". The file server disclosed by Orr further discloses an interface to a network, mass storage accessible through said interface, and a processor that controls access to said mass storage (From line 66 of column 4, "The file server system 40 includes, for example, a keyboard 42 attached to a system unit 44 including a main CPU 46, system RAM 48, system flash ROM 50, CMOS RAM 51 and mass storage capability 52. The mass storage capability 52 is typically in the form of multiple magnetic disk drives constituted in a RAID (redundant array of independent disks) arrangement. Stored on the server mass storage devices 52 are a variety of different types of software including, for example, operating system software and application software for downloading to client systems connected to the file server 40. The server system 40 may optionally include a display 54 and other storage devices such as a diskette drive and CD-ROM drive (not shown). The file server 40 communicates with the control computer 10 via I/O 56 which may take the form of an adapter card.").

Further referring to claims 1, 16, and 30, although Chen et al. do not specifically disclose that said diagnostic software module is on said file server, self-diagnosis for a system that diagnoses other systems is known in the art. An example of this is shown by La Joie et al., from line 54 of column 24, "In particularly preferred embodiments of

the present invention, the monitoring system further includes the circuitry necessary to initiate, control and evaluate a boundary scan test on the hardware of the monitoring system. Boundary scan testing of the monitoring system is controlled by the monitoring system TAP controller 124, which is a state machine much like the TAP controller 112 shown in FIG. 6 as a standardized component of a boundary scan test device 100. By providing a boundary scan test facility within the monitoring system, the monitoring system can perform self diagnostics to ensure that its components are functioning normally." A person of ordinary skill in the art at the time of the invention would have been motivated to incorporate self diagnosis in a diagnostic system because, from line 63 of column 24 of La Joie et al., "the monitoring system can perform self diagnostics to ensure that its components are functioning normally" and from the abstract of Chen et al., "to diagnos[e] poorly performing data processing systems".

Referring to claims 2, 17, and 31, Chen et al. disclose said diagnostic software module includes a pattern matching system and a rule-based inference system (From line 28 of column 83, "The first phase of creating the library is to gather performance recordings, analysis, and "treatment" data at 502. Using the prerequisite recording/playback tools, performance "scientists" would go about to various configurations of their systems and make recordings of raw performance data e.g., CPU, Memory, Disk, Network, etc. utilization. Recordings are made of pathological cases that were artificially constructed "in vitro" experiments or live "in vivo" field observations of performance problems. During this first phase 502, almost all the recordings will be new observations. As the recording data base (DB) grows, additional

observations that can be grouped with known pathologies should be saved in a compressed format so that statistical profiles can be generated from the captured data at 506. Unique new observations are processed in the second phase 504. The second phase of library creation is the systematic description, annotation, analysis, categorizing, naming, and manipulating of the recording data before entering them into the library at 508. Two major categories are the "wellness" DB and the "diseases" DB. This second phase sorts the recordings into these two major categories at 510 by detecting and associating pathological effects to each recording. For example, a recording may show a "runaway" process running at 100% CPU utilization when it should be idling. Or a "thrashing" recording may show excessive disk paging for a process that has large resident set memory requirements in a memory constrained system. The key characteristic factors in these scenarios would be described, annotated on the recording, named, categorized, and possibly filtered compressed, scaled, correlated to other known phenomenon before placed in the "wellness" 512 or "disease" 514 DB." Further, from line 5 of column 84, "After a pathology library has been established, it needs an efficient access mechanism to be useful for library users. Raw performance recordings by themselves have limited usage and only for specialized group of people. The main search mechanism is a conventional computer based query data base commonly known in the art, such as the Oracle Relational Data Base Management System (RDBMS), described in "Oracle for IBM RISC System/6000 Installation and User s Guide", ver 6.0, part number 5687-v6.0.31, dated 1991 and hereby incorporated by reference as background material. The database has all the

key information on each recording. Recordings themselves may still have the markings and annotations of the original observer, but the salient characteristics of the recordings need to be part of the search data base." Further, from line 51 of column 84, "As "cures" are found for these performance "diseases", they are also stored in the database, and linked to the corresponding disease(s). A recording of the new "healthy" response is also stored so a user can see what the system should look like after application of the "cure" As observations become more precise, automatic data filters can be used to automatically correlate and cross correlate data patterns to help automate the data analysis process. The data filter takes specific system performance data at each sample point and runs it through a correlation procedure to see if the data values can be correlated to some known pathological pattern. The filtering process may need to sample the data over time to match a data trend in addition to individual sampled values. The filtering process includes combinations of arithmetic and boolean operators on the data variables. The data filter may generate a value that sets off an alarm or some other user specified process. For example, a data filter may set an alarm when paging space on the host machine is less than 10 percent free or there is less than 100 pages of free paging space.").

Referring to claims 3, 18, and 32, Chen et al. disclose said monitoring statistics include information gathered by at least a first and at least a second software module, said first and second software modules being disposed at differing levels of said file server (From line 28 of column 83, "The first phase of creating the library is to gather performance recordings, analysis, and "treatment" data at 502. Using the prerequisite

recording/playback tools, performance "scientists" would go about to various configurations of their systems and make recordings of raw performance data e.g., CPU, Memory, Disk, Network, etc. utilization. Recordings are made of pathological cases that were artificially constructed "in vitro" experiments or live "in vivo" field observations of performance problems. During this first phase 502, almost all the recordings will be new observations. As the recording data base (DB) grows, additional observations that can be grouped with known pathologies should be saved in a compressed format so that statistical profiles can be generated from the captured data at 506. Unique new observations are processed in the second phase 504."). Although Chen et al. do not specifically disclose gathering within an operating system, gathering performance data in an operating system is notoriously well known in the art. Examiner takes official notice for gathering data in an operating system. A person of ordinary skill in the art at the time of the invention would have been motivated to gather data in an operating system because operating systems provide a platform for performing operations in a computer and interfacing between software and hardware components.

Referring to claims 4, 19, and 33, Chen et al. disclose said monitoring statistics include information gathered by at least one software module of said file server (From line 28 of column 83, "The first phase of creating the library is to gather performance recordings, analysis, and "treatment" data at 502. Using the prerequisite recording/playback tools, performance "scientists" would go about to various configurations of their systems and make recordings of raw performance data e.g., CPU, Memory, Disk, Network, etc. utilization. Recordings are made of pathological

cases that were artificially constructed "in vitro" experiments or live "in vivo" field observations of performance problems. During this first phase 502, almost all the recordings will be new observations. As the recording data base (DB) grows, additional observations that can be grouped with known pathologies should be saved in a compressed format so that statistical profiles can be generated from the captured data at 506. Unique new observations are processed in the second phase 504."). Although Chen et al. do not specifically disclose gathering within an operating system, gathering performance data in an operating system is notoriously well known in the art. Examiner takes official notice for gathering data in an operating system. A person of ordinary skill in the art at the time of the invention would have been motivated to gather data in an operating system because operating systems provide a platform for performing operations in a computer and interfacing between software and hardware components.

Referring to claims 5, 20, and 34, Chen et al. disclose a period for repeatedly monitoring (From line 46 of column 82, "Once constructed, the purpose of a performance pathology library is to provide wide and easy access to the body of knowledge of computer and network performance problems and solutions. This knowledge can then become the basis for advancing the state of the art in developing intelligent machines that can know when they are in a "poor performance" mode, take corrective action, and monitor the corresponding results in a closed feedback loop." Further, from line 62 of column 84, "The filtering process may need to sample the data over time to match a data trend in addition to individual sampled values."). Although Chen et al. do not specifically disclose said selected time period is less than 10

seconds, collecting data at a period of less than 10 seconds is a matter of design dependent on system components (such as processor speed), network connectivity, and system load.

Referring to claims 6, 21, and 35, Chen et al. disclose said steps of processing are responsive to a usage profile for said file server (From line 38 of column 83, "As the recording data base (DB) grows, additional observations that can be grouped with known pathologies should be saved in a compressed format so that statistical profiles can be generated from the captured data at 506.").

Referring to claims 7, 22, and 36, although Chen et al. do not specifically disclose said usage profile includes information regarding whether use of said data processing system includes usage as an ISP, a development environment, or a mail server, such uses for a data processing system are notoriously well known in the art. Examiner takes official notice for using a file server as a mail server (wherein a file is understood to be a basic unit of storage). A person of ordinary skill in the art at the time of the invention would have been motivated to monitor a file server used as a mail server, and thus create a usage profile in the form of historical data, because, from the abstract, there is a need to determine "whether a problem or a potential problem exists based on the analysis of the network environment".

3. Claims 13, 15, 27, 29, 41, and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4296464 to Woods et al. in view of US 6189114 to Orr and US 5553235 to Chen et al. Referring to claims 13, 27 and 41, Woods et al. disclose tracking configuration changes to a computer system (From line 66 of column 12, "To

accomplish that, selected ones of the parameter sensing devices 18a associated, for example, with a digital process input board 70a, are arranged to monitor the selected parameters. When changes are detected in those parameters, a signal is developed which is transmitted through the digital process input board 70a to the process I/O controller 64 by way of the I/O bus 68."); identifying an error or other failure in said computer system (From line 58 of column 12, "As was earlier mentioned, there are control situations wherein it is desirable to know the value or condition of certain parameters immediately prior or leading up to a major fault or other previously identified condition."); relating said error or other failure to timing of said configuration changes; and identifying, in response to said steps of tracking and of relating, one or more of said configuration changes (From line 20 of column 13, "For those signals which are representative of the parameters which are monitored as being of interest relative to the aforementioned fault, the time base signal coincident with the occurrence of that signal is read out by the microprocessor 58 and superimposed upon that signal. The data signal, together with the appropriate time-tag signal is stored in the alarm tables of the RAM. The occurrence of those signals in the RAM 62 results in an interrupt signal being produced through the interface controller 8 which is recognized in the control mechanism of the PIU and called forth by the CPU 2 for analysis as to the probable cause of the fault which followed the change of state in those monitored parameters. Because these parameter signals are time-tagged by operation of the time base generator 120, the order of occurrence of the changes in the parameters will be recorded. The proper analysis of the ensuing fault is greatly enhanced by the ability to

identify the sequence of events leading to the fault or questioned condition.").

Further referring to claims 13, 27, and 41, although Woods et al. do not specifically disclose said computer system can be a file server, diagnosing a computer system that is a file server is well known in the art. An example of this is shown by Orr, from line 11 of column 1, "The complexity of modern-day data processing systems provides many benefits to the user. However, the variety and complexity of different components in the system can give rise to problems in diagnosing the source of a problem in the system. Accordingly, it is an ongoing requirement to provide for diagnostic testing of data processing systems, especially systems such as, for example, network file servers where a problem can lead to significant network downtime and/or loss of user data. Comprehensive diagnostic testing involves exercising the operation of many different components of the system in order to determine the cause of a fault." A person of ordinary skill in the art at the time of the invention would have been motivated to diagnose a file server because, from line 17 of column 1, "a problem can lead to significant network downtime and/or loss of user data". The file server disclosed by Orr further discloses an interface to a network, mass storage accessible through said interface, and a processor that controls access to said mass storage (From line 66 of column 4, "The file server system 40 includes, for example, a keyboard 42 attached to a system unit 44 including a main CPU 46, system RAM 48, system flash ROM 50, CMOS RAM 51 and mass storage capability 52. The mass storage capability 52 is typically in the form of multiple magnetic disk drives constituted in a RAID (redundant array of independent disks) arrangement. Stored on the server mass storage devices

52 are a variety of different types of software including, for example, operating system software and application software for downloading to client systems connected to the file server 40. The server system 40 may optionally include a display 54 and other storage devices such as a diskette drive and CD-ROM drive (not shown). The file server 40 communicates with the control computer 10 via I/O 56 which may take the form of an adapter card.").

Further referring to claims 13, 27, and 41, although Woods et al. do not specifically disclose the fault is indicated by identifying changes in monitoring statistics, fault recognition through the utilization of monitored statistics is well known in the art. An example of this is shown by Chen et al., from line 46 of column 82, "Once constructed, the purpose of a performance pathology library is to provide wide and easy access to the body of knowledge of computer and network performance problems and solutions. This knowledge can then become the basis for advancing the state of the art in developing intelligent machines that can know when they are in a "poor performance" mode, take corrective action, and monitor the corresponding results in a closed feedback loop." Further, from line 62 of column 84, "The filtering process may need to sample the data over time to match a data trend in addition to individual sampled values." A person of ordinary skill in the art at the time of the invention would have been motivated to use statistic monitoring to indicate a fault because, the abstract of Chen et al., it "provide[s] a facility to diagnos[e] poorly performing data processing systems, by capturing performance statistics and comparing these statistics against known problematic statistics." Further, from line 47 of column 82 of Chen et al., it "provide[s]

wide and easy access to the body of knowledge of computer and network performance problems and solutions. This knowledge can then become the basis for advancing the state of the art in developing intelligent machines that can know when they are in a "poor performance" mode, take corrective action, and monitor the corresponding results in a closed feedback loop."

Referring to claims 15, 29, and 43, Woods et al. in view of Chen et al. disclose said configuration changes include hardware and software configuration changes, monitoring hardware and software for changes is (From line 51 of column 2 of Chen et al., "There is a need to provide a data processing system performance tool that is flexible and easy to use, that can monitor hardware as well as software events and process activities, that can capture data (e.g. read sampled data) for subsequent retrieval and analysis, and that provides other facilities to further analyze and categorize such captured data.").

4. Claims 14, 28, and 42, are further rejected under 35 U.S.C. 103(a) as being unpatentable over US 4296464 to Woods et al. in view of US 6189114 to Orr and US 5553235 to Chen et al. as applied to claims 13, 27, and 41 above, and further in view of US 6012100 to Frailong et al. Referring to claims 14, 28, and 42, Chen et al. disclose correcting an identified error (From line 51 of column 84, "As "cures" are found for these performance "diseases", they are also stored in the database, and linked to the corresponding disease(s). A recording of the new "healthy" response is also stored so a user can see what the system should look like after application of the "cure".). Woods et al. further discloses, from line 36 of column 13, "The proper analysis of the ensuing

fault is greatly enhanced by the ability to identify the sequence of events leading to the fault or questioned condition." Although Woods et al. in view of Orr and Chen et al. do not specifically disclose suggesting activities to reverse said configuration changes so as to place said file server in an operating state, reversing configuration changes to restore operation is well known in the art. An example of this is shown by Frailong et al., from line 52 of column 10, "Log file 710 maintains a list of completed transactions to disk, and allows a mechanism whereby the configuration manager can roll back to a known good state in the event of a system crash." A person of ordinary skill in the art at the time of the invention would have been motivated to rollback because it, from line 54 of column 10, provides a "known good state".

Response to Arguments

5. Applicant's arguments with respect to claims 1-7, 13-22, 27-36, and 41-43 have been considered but are moot in view of the new ground(s) of rejection.

6. Examiner notes that the extent of amendment to claims 13, 27, and 41 as of paper no. 23 have not been adequately reflected in the record. The claims in question have been further amended by the removal of the last limitation, "suggesting, in response to a result of said step of determining, an activity to reverse one or more of said configuration changes".

7. In response to Applicant's argument that "the claims cannot recite "how the changes in statistics and time of configuration changes are related," because that is the very thing determined by the step, Examiner further notes that Applicant has done an adequate job conveying this very relation a few lines prior to this argument, reproduced

for Applicant's convenience herein, "identifying a relationship between changes in statistics and timing of configuration changes" or "identifying how changes in statistics and timing of configuration changes are related". Examiner furthermore notes that such an identification of a relationship establishes the *identification* of a connection of prior existence rather than forming a connection that has not necessarily been connected previously. Such an identification can form the basis for further steps that are rely on that identification.

Examiner notes that instead of moving in this direction, Applicant has decided to greatly broaden the claims by further amending by not only removing "suggesting, in response to a result of said step of determining, an activity to reverse one or more of said configuration changes", but also removing any determination that the identified configuration change is responsible for the error of the file system. This further removes this last identifying step as relying on the previous relating step and opens the claim to the interpretation that said identification of the configuration change need only occur after said relating, and need not have any further connection, including but not limited to, the information regarding any such relation of statistics to configuration.

8. In response to Applicant's argument of what "configuration changes" and "statistics" *could* include, Examiner notes that such examples are neither claimed nor, in any concrete way, establish what these configuration changes or statistics include. These terms will continue to be given their broadest, reasonable interpretation.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gabriel L. Chu whose telephone number is (703) 308-7298. The examiner can normally be reached on weekdays between 8:30 AM and 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert W. Beausoliel, Jr. can be reached on (703) 305-9713. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

gc

ROBERT BEAUSOLIEL
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2100